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ABSTRACT

This teaching guide accompanies the Population Growth Rate poster kit which is designed to teach students about population growth differences between rich and poor nations and about what people in developing countries are doing to help improve their quality of life. The guide is designed for use with: (1) a poster map of the world providing social and economic indicators and three statistical charts; and (2) six population education photographs with accompanying textual material about family planning, the status of women, economic and social security, education, government policies and health services. The teaching guide contains student worksheets; a student test; and a population growth data table organized by countries, and presents information about: (1) basic concepts; (2) goals and objectives; (3) World Bank data, maps, and country groups; (4) the use of statistics; and (5) terminology. The student worksheets teach: (1) vocabulary matching; (2) how to read and interpret the accompanying maps, charts, and photographs; (3) role playing; and (4) how to use the data table. (JHP)

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MEASURES OF PROGRESS

TEACHING GUIDE

Population Growth Rate

Poster Kit Number 2

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Contents

Introduction 3

Vocabulary 4

Worksheet 1: Vocabulary matching

Poster Exercises 6

Worksheet 2: Understanding the map
Worksheet 3: Understanding Chart 1
Worksheet 4: Understanding Chart 2
Worksheet 5: Understanding Chart 3
Worksheet 6: True or false statements

Photograph Exercises 11

Worksheet 7: Exploring the photographs
Worksheet 8: Role playing

Data Table Exercises 13

Worksheet 9: Using the Data Table

To Take You Further 14

Worksheet 10: Thinking and calculating for yourself

Data Table 15

Test 16

Answers 18

Outline Map 20

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About the poster kit

This teaching guide accompanies the Population Growth Rate poster kit, which is the second in a series of poster kits entitled *Measures of Progress*. The series studies economic and social development in developing countries and is published by the World Bank.

Each poster kit contains:

- a color poster map of the world showing a particular social or economic indicator
- six color pictures of people in developing countries involved in activities that will help improve the quality of their lives
- a teaching guide with activities and test.

Statistics for this poster kit were supplied by the World Bank's International Economics Department and the Population and Human Resources Department. The poster map was prepared by the World Bank's Cartography Division. The denominations, classifications, boundaries, and colors used in the map do not imply on the part of the World Bank any judgment on the legal or other status of any territory or any endorsement or acceptance of any boundary. The views and interpretations presented here should not be attributed to the World Bank, to any individual acting on its behalf, or to its Board of Directors and the countries they represent.

What is the World Bank?

The World Bank is an international institution owned by 151 countries. Its work is to help its developing member countries improve the living conditions of their people. It does this by lending them money for development projects and for structural and sectoral adjustment and by providing various kinds of technical assistance. Its loans have longer repayment periods than commercial bank loans. The International Development Association, which is part of the World Bank, makes interest-free loans for even longer periods to the Bank's poorest member countries. The World Bank began to operate in 1946; the International Development Association was founded in 1960. Their loans to the developing countries now amount to about $16 billion a year.

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Introduction

This poster kit presents statistics on population growth from 128 countries with populations of more than 1 million. The statistics measure social and economic conditions in both industrial and developing countries.

The goal of economic development is to raise standards of living in the developing countries, so that people there can live better, fuller lives. In the past three decades, the developing countries have made considerable progress, but much remains to be done.

Many factors contribute to economic development, including the abundance of a country's resources, its access to other resources through trade, and the state of the global economy. This poster kit is designed to promote understanding of the development process. With its teaching guide, the kit is a learning program for secondary schools.

Basic concepts

- Population growth rates tend to be much higher in developing countries than in industrial countries.
- The average population growth rate for the developing countries was lower in the 1970s and mid-1980s than in the 1960s, but annual increases in population were larger—because the population base had become larger.
- There will be over 1 billion more people in the world in 2000 than there are today (as population grows from 4.9 billion to 6.1 billion) and 9 out of 10 of them will be in developing countries.
- To slow population growth, the total fertility rate must decrease. Fertility tends to decrease with improvements in family planning, the education and status of women, and economic and social services.

Teaching goals and objectives

As a result of using this poster kit, students should be able to:

- read and interpret data about population growth rates on maps, graphs, and charts
- explain the relationship between population growth and the total fertility rate
- explain some of the factors that slow down population growth and decrease the total fertility rate

A test to measure the achievement of these goals and objectives is on page 16.

Technical notes

Data and maps. Because the World Bank is continuously updating its data, some of the figures in this kit differ from other World Bank data. Maps are based on the Eckert IV equal-area projection, which maintains correct areas for all countries, but somewhat distorts shape, distance, and direction.

Country groups. The World Bank groups countries by regions and by economic characteristics. The classifications by economic characteristics are:

- *Industrial countries*—19 countries in Asia, Europe, and North America.
- *Developing countries*—97 countries that fall into two subgroups: low-income developing countries, where most people are unable to meet their basic needs; and middle-income developing countries, where the standard of living is higher but many people are still too poor to meet their basic needs.
- *East European countries*—8 countries (Albania, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and the USSR) that are not grouped with the developing or the industrial countries because of differences in their economic organization and because income data for most of them are not comparable with data from other countries.
- *High-income oil exporting countries*—4 countries (Kuwait, Libya, Saudi Arabia, and the United Arab Emirates) that are not grouped with the industrial or developing countries because their income levels would place them with the industrial countries but their economic structure with the developing countries.

The classifications by geographic region are shown in the Data Table on page 15. The six regions are: North and Central America, South America, Europe, Middle East and North Africa, Sub-Saharan Africa, and Asia and the Pacific.

A word about statistics

Statistics can be powerful tools for understanding economic development, but they have limitations. Statistics can be based on counting, estimates, or other statistics. They are more accurate for some countries than others. And because it takes a long time to collect and verify some statistics, they may be out of date soon after they are published. The statistics in this poster kit are the most recent ones available at the time of publication.

Many aspects of economic development cannot be measured by statistics. Examples are the attitudes and feelings of people, their values and ideas, their social and political systems, and their history and culture. So, while statistics can tell much about economic development, there is much they do not tell. This kit thus tells only part of the story of economic development, but it is an important part.

Vocabulary

birth control—controlling the number of children born.

birth rate—the number of births in a year expressed as a percentage of the total population.

breast feeding—feeding a baby with mother's milk.

contraception—deliberately preventing conception.

death rate—the number of deaths in a year expressed as a percentage of the total population.

dehydration—lack of water and other bodily fluids.

developing country—a country where most people have a low standard of living with few goods and services. There are more than 100 developing countries; their total population is about 3.5 billion. Developing countries are most often located in Africa, Asia, and South America; they are also known as industrializing countries, less developed countries (LDCs), poor countries, the South, and the Third World.

economic growth—the process by which a country increases its ability to produce goods and services.

family planning—a health service that offers counseling and other measures to couples to help them decide whether they want to have children and, if so, when and how many.

health services—services generally provided by the government that help improve people's health, including family planning, nutrition classes, and immunization.

hygiene—practices that help ensure cleanliness and good health; for example, frequent hand washing.

immunization—the medical procedure that increases a person's resistance to diseases such as measles, smallpox, whooping cough, diphtheria, and tetanus.

industrial country—a country where most people have a high standard of living with many goods and services. There are 19 industrial countries; their total population is about 1.5 billion. Industrial countries are most often located in North America, Western Europe, and some parts of Asia; they are also known as developed countries, the North, or the First World.

low-income developing country—a country that is among the "poorest of the poor," where many people cannot meet their basic needs. Almost 2.5 billion people live in such countries.

middle-income developing country—a country with a slightly higher standard of living than a low-income developing country, but where many people still cannot meet their basic needs. About 1 billion people live in such countries.

nutrition—eating foods that promote physical growth and good health.

oral rehydration therapy (ORT)—a simple and inexpensive treatment for children suffering from dehydration caused by diarrhea.

population growth rate—the increase in a country's population during a period of time, usually one year, expressed as a percentage of the population at the start of that period. It reflects the number of births and deaths during the period and the number of people moving to and from a country.

sanitation—maintaining clean, hygienic conditions in order to help prevent disease.

social services—services generally provided by the government that help improve people's standard of living; for example, schools, hospitals and clinics, good roads, clean water supply, garbage collection, electricity, and telephone service.

spacing—planning the birth of children so they are at least two years apart.

total fertility rate—the average number of children a woman will have during her lifetime. The total fertility rate in developing countries ranges from three to eight.

Name _____

Date _____

Worksheet 1: Vocabulary matching

Match the following terms with the phrases below. Note there are two more vocabulary terms than needed.

breast feeding	developing countries	immunization	population growth rate
contraception	family planning	industrial countries	economic growth
death rate	health services	nutrition	spacing
dehydration	hygiene	oral rehydration therapy	total fertility rate

1. People in developing countries need more _____, including nutrition classes, family planning, and immunization, to improve their standard of living.

2. Couples use _____ when they want deliberately to prevent conception.

3. About 3.5 billion people live in _____, where there is a low standard of living and few goods and services.

4. _____ helps protect people from diseases such as measles and polio.

5. When the average number of children born to each woman in a country is two, the _____ is low.

6. Thanks to improved medical techniques, the _____ is decreasing in developing countries.

7. When parents practice _____, they make sure that their children are born at least two years apart.

8. Good _____ means eating foods that promote physical growth and good health.

9. Frequent hand washing is an example of good _____.

10. _____ services help parents decide if and when they want to have children.

11. Thousands of children in developing countries die each year from simple _____ caused by diarrhea.

12. The difference between a country's death and birth rates represents its _____.

13. Countries such as Canada, Japan, or Sweden, where people have a high standard of living and access to many goods and services, are called _____.

14. A country experiences _____ when its ability to produce goods and services increases.

Name_____

Date_____

Worksheet 2: Understanding the map

1. According to the key to the right of the world map, what color indicates a high population growth rate? a low population growth rate?

2. What percentages indicate a high population growth rate? a low population growth rate?

3. Using the map, name three countries with the following population growth rates. Next to each country write the continent on which it is located.

3% or more	2% to 2.9%
_____	_____
_____	_____
_____	_____
1% to 1.9%	**0.9% or less**
_____	_____
_____	_____
_____	_____

4. On which continent(s) do you find the countries with the highest population growth rates?

5. On which continent(s) do you find the countries with the lowest population growth rates?

6. On which continents would you expect to find the most countries with a high standard of living? a low standard of living?

7. Give examples of how living conditions might differ in countries with high or low standards of living.

8. How might these differences affect the population growth rate?

9. What relationship, if any, can you observe between a country's population growth rate and its level of economic development?

Name _____

Date _____

Worksheet 3: Understanding Chart 1

Population Growth Rate in Developing and Industrial Countries, 1950-86

Population growth rates are high in the developing countries mainly because death rates have declined since 1950 while birth rates have remained high. The chart shows birth and death rates in the developing and industrial countries between 1950 and 1986. The gap between them approximates the population growth rate. (The chart does not include migration because it is not important in most developing countries.)

For population growth to slow down, the gap between birth rates and death rates must narrow. Death rates in the developing countries declined with the spread of modern medical methods in the 1950s and 1960s and are continuing to decline. Birth rates have begun to decline in response to improvements in the education and status of women and in family planning, health, and social services.

1. What two groups of countries are being compared in Chart 1?

2. What data are represented by the blue line? by the red line?

3. How do these data contribute to an understanding of population growth rates?

4. Between 1950 and 1986 what happened to:
   a. birth rates in industrial countries?

   b. death rates in industrial countries?

   c. birth rates in developing countries?

   d. death rates in developing countries?

5. Which group of countries has:
   a. the largest gap between the birth and death rate?

   b. the smallest gap between the birth and death rate?

6. How might you explain the birth and death rate trends that you see in Chart 1?

7. How have the following helped to slow down population growth?
   a. modern medical methods

   b. family planning

   c. education of women

   d. health and social services

Name _____

Date _____

Worksheet 4: Understanding Chart 2

Population Size, Average Annual Growth, and Average Annual Increase in Developing Countries, 1965-86

The average population growth rate for the developing countries was lower in the 1970s and mid-1980s than in the 1960s, but annual increases in population were larger—because the population base had become larger. The chart shows the total population in 1965, 1975, and 1986 for the developing countries, their average annual population growth rate in the 1960s, 1970s, and mid-1980s, and their average population increase each year for the two-and-a-half decades. Although the growth rate has gone down, the number of people added each year has increased.

	1965	1975	1986
Population (millions)	2,382.9	3,016.1	3,796.5
	1960-69	1970-79	1980-86
Average annual growth rate	2.4%	2.1%	2.06%
Average annual increase (millions)	57.3	63.5	72.4

1. How would you describe the trend in the average annual population growth rate for developing countries between 1960 and 1986?

2. What factors may have contributed to this trend?

3. How would you describe the average annual increase in population for developing countries between 1960 and 1986?

4. Do you agree or disagree with the following statement. Give reasons for your answer.

> "Population growth rates are going down in developing countries, therefore population is no longer a problem."

Name _____

Date _____

Worksheet 5: Understanding Chart 3

Population by country group, 1960, 1986, 2000

For most developing countries, especially the poorest, population growth will be rapid to the end of the century. The bar chart shows population by country group for 1960 and 1986, as well as projected population for 2000. The pie chart shows the proportion of total world population accounted for by each country group in 1986.

Rapid population growth makes it difficult to raise standards of living because the more people there are, the greater is the pressure to provide the food, energy, housing, and social services that improve living conditions. To relieve that pressure, many of the developing countries are trying to slow down population growth by reducing the total fertility rate, which is the average number of children born to each woman.

Population by country group	1960	1986	2000
Low-income countries	1,416,665,000	2,499,415,000	3,177,000,000
Middle-income countries	641,664,000	1,297,110,000	1,663,000,000
Industrial countries	499,998,000	740,735,000	781,000,000
East European nonmarket countries	291,665,000	346,647,000	430,000,000

Shares of total population, 1986

Low-income countries:	50.9%	East European nonmarket countries:	7.1%
Middle-income countries:	26.4%	High-income oil producing countries:	0.4%
Industrial countries:	15.1%		

1. Developing countries are divided into two groups. What are they? In what ways do they differ?

2. Of these two groups of developing countries,
   a) which group had the largest population in 1960?

   b) which group had the greatest increase in population size between 1960 and 1986?

   c) which group will have had the greatest increase in population size by the year 2000?

3. In 1986 what was the approximate population for
   a. the world?
   b. all developing countries?
   c. industrial and East European countries?

4. In 1986 what percentage of the world's population lived in the developing countries?

5. In 2000 what is the approximate projected population for
   a. the world?
   b. all developing countries?
   c. industrial and East European countries?

6. In 2000 what percentage of the world's population will live in developing countries?

7. What demands will this projected increase in population place on developing countries?

8. Will reducing a country's total fertility rate help to slow down population growth? Explain.

Name _____

Date _____

Worksheet 6: True or false statements

Answer each statement True or False. Make the false statements true by changing the underlined words or phrases. Use Charts 1, 2, and 3, and the world map to find the correct responses.

_____ 1. Most of the countries with high population growth rates are concentrated in Asia.

_____ 2. Argentina has a high population growth rate.

_____ 3. A continent with a low population growth rate is Europe.

_____ 4. It is more difficult to raise the standard of living of people when the population growth rate is decreasing.

_____ 5. Industrial countries tend to have lower population growth rates than developing countries.

_____ 6. The average annual population growth rate in developing countries has been slowly increasing since 1960.

_____ 7. In 1980 the birth rate in developing countries was almost 4%.

_____ 8. The average number of children born to each woman is called the birth rate.

_____ 9. If birth rates decrease faster than death rates, the population growth rate will decrease.

_____ 10. Population in developing countries was more than 3.5 billion in 1986.

_____ 11. The average annual increase in population in developing countries was greater between 1980 and 1986 than between 1970 and 1979.

_____ 12. Between now and the end of the century, population will increase most rapidly in the middle-income developing countries.

_____ 13. Decreasing the total fertility rate in developing countries should increase the population growth rate.

_____ 14. As total world population increases, the greatest need for food, energy, housing, and social services will come from the low-income developing countries.

_____ 15. More than three-quarters of the world's people live in industrial countries.

_____ 16. Birth rates are significantly affected when men have access to education.

Name _____

Date _____

Worksheet 7: Exploring the photographs

These photographs are from actual development projects in different developing countries. They represent the kinds of activities that help slow down population growth and help improve people's standard of living. These activities can be divided into six different sectors—education, status of women, family planning, health services, government policies, and economic and social security.

1. Look at your photograph. What do you think is going on?

2. What sector do you think the photograph represents?

3. Could your picture also represent another sector? If so, which one(s) and why?

4. Now read the text on the back of the photograph and answer these questions.
   a) What sector does your photograph actually represent?

   b) What is really going on in the picture?

   c) What kind of project is it?

   d) Where was the picture taken?

   e) Find the country on a map. What continent is it on?

   f) What is the country's population growth rate, and how does it compare to the one for your country?

5. In what ways do you think this kind of project might help to slow down the population growth rate? to improve living standards?

6. What, if any, aspects of the project might also help to improve the standard of living in industrial countries?

7. Read the text again and outline the main points. Using your outline, take five to ten minutes to teach the rest of the class about your photograph. (If students ask some questions that you are unable to answer, write the questions down, research the answers, then report back to the class.)

8. After all the pictures have been discussed, identify six activities that developing countries can engage in to reduce rapid population growth rates.

Name _____

Date _____

Worksheet 8: Role playing

You are a development expert working in the Ministry of Planning in a developing country with a population of 55 million people, three out of four of whom live in rural areas. You have received a list of ten projects, each of which is designed to help decrease the total fertility rate in your country. Your budget is $1.5 million. Which three projects would you select and why? How much of your budget would you allot to each chosen project and why?

1. Design a national media campaign—using radio, television, newspapers, billboards, leaflets, and well-known personalities—to encourage parents to send their young daughters to primary school. Estimated cost: $75,000

2. Organize a series of workshops for primary school teachers and administrators to discuss the importance of having more girls in primary school and strategies to increase their enrollment. Estimated cost: $50,000

3. Hold a series of meetings with business leaders to discuss their labor needs. Then set up several training centers throughout the country where women can learn the skills necessary for these jobs.
Estimated cost: $40,000 per center

4. Establish a committee to assess women's rights within the country's legal system. If necessary, organize legislative action to enact laws giving women certain rights regarding marriage, divorce, property, and inheritance.
Estimated cost: $30,000

5. Send health care workers to villages and neighborhoods to teach women about family planning and the options it gives them. Estimated cost: $25,000 per health worker

6. Train local women as family planning workers to teach residents about family planning and provide follow-up services for women practicing birth control. Estimated cost: $10,000 per local worker

7. Build and equip health clinics throughout the country so that no resident is more than one day's journey from the nearest clinic. Estimated cost: $95,000 per clinic

8. Design and implement a national media campaign to teach about birth control, spacing, and breast feeding.
Estimated cost: $75,000

9. Plan a series of radio and newspaper addresses from the president of your country to all citizens emphasizing the importance of slowing down population growth and urging all citizens to take responsibility for the future of their country. Estimated cost: $20,000

10. Set up programs in the country's two largest cities where families can borrow money at reasonable interest rates to build simple but sturdy houses that they will then own. Estimated cost: $90,000 per program

	Project	Budget
1.	_____	_____
2.	_____	_____
3.	_____	_____
	Total	_____

Name _____

Date _____

Worksheet 9: Using the Data Table

1. Using the Data Table, fill in this chart for the ten most-populated countries, starting with the largest.

	Key	Country	Population (millions) 1986	Avg. annual pop. growth rate (%) 1965-80	Avg. annual pop. growth rate (%) 1980-85	Geographic region
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

2. What trends does the chart suggest? Are these trends important? Why or why not?

3. Fill in this chart using the Data Table.

	Life expectancy at birth, 1986	Avg. annual pop. growth rate, 1980-85 (%)		Life expectancy at birth, 1986	Avg. annual pop. growth rate, 1980-85 (%)
Group A			**Group B**		
Cote d'Ivoire	52	___	Canada	76	___
Iraq	60	___	China	69	___
Kenya	54	___	Denmark	75	___
Nicaragua	60	___	Israel	75	___
Pakistan	51	___	Mauritius	66	___
Zimbabwe	57	___	Uruguay	73	___

4. Write a statement comparing life expectancy in Group A with Group B.

5. Write a statement comparing average annual population growth rates in Group A with Group B.

6. What factors have you studied that could lead both to an increase in life expectancy and a decrease in rapid population growth?

Name _____

Date _____

Worksheet 10: Thinking and calculating for yourself

1. Improving the health of mothers and their children tends to decrease the total fertility rate. Why do you think this is true?

2. Increasing agricultural productivity and prices may tend to help lower the number of children a rural farm family is likely to have. Why do you think this is true?

3. When parents—especially mothers—have a basic education, their babies tend to have a better chance of surviving. Why do you think this is true?

4. Rapid population growth hurts the poorest people the most. Why do you think this is true?

5. At the beginning of the year Country Y's population was 72,340,000, and at the end of the year it was 74,003,820. Calculate Country Y's population growth rate for the year using this formula:

population change ÷ population at the start of the year X 100 = annual population growth rate (%)

6. At the beginning of 1987 Country X had a population of 90,775,000. During the year there were 3,812,550 births and 1,270,850 deaths. By how many people did the population increase? Use the formulas below to calculate the birth rate, death rate, and approximate population growth rate for Country X.

- number of births ÷ population X 100 = birth rate (%)
- number of deaths ÷ population X 100 = death rate (%)
- birth rate (%) - death rate (%) = population growth rate (%)

7. Calculate the projected population increase in percent for low-income developing countries between 1986 and 2000. Use this formula:

population increase between 1986 and 2000 ÷ population in 1986 x 100 = population increase (%)

Data Table: Population Growth

Key	Country	Avg. annual pop. growth (%) 1965–80	Avg. annual pop. growth (%) 1980–85	Population (millions) 1986*
North and Central America				
i	Canada	1.3	1.1	25.6
m	Costa Rica	2.8	2.7	2.7
m	Cuba	1.5	0.8	10.2
m	Dominican Rep.	2.7	2.4	6.6
m	El Salvador	2.7	1.0	4.9
m	Guatemala	2.8	2.9	8.2
l	Haiti	2.0	1.8	6.0
m	Honduras	3.2	3.5	4.5
m	Jamaica	1.1	1.6	2.3
m	Mexico	3.2	2.6	80.7
m	Nicaragua	3.1	3.4	3.4
m	Panama	2.6	2.2	2.2
m	Trinidad & Tobago	1.3	1.6	1.2
i	United States	1.0	1.0	241.2
South America				
m	Argentina	1.6	1.6	30.9
m	Bolivia	2.5	2.8	6.5
m	Brazil	2.5	2.3	138.4
m	Chile	1.8	1.7	12.2
m	Colombia	2.2	1.9	28.9
m	Ecuador	3.1	2.9	9.6
m	Paraguay	2.9	3.3	3.8
m	Peru	2.7	2.3	19.0
m	Uruguay	0.4	0.7	3.0
m	Venezuela	3.5	2.9	17.8
Europe				
e	Albania	2.5	2.1	3.0
i	Austria	0.3	0.0	7.6
i	Belgium	0.3	0.1	9.9
e	Bulgaria	0.5	0.2	9.0
e	Czechoslovakia	0.5	0.3	15.5
i	Denmark	0.5	0.1	5.1
i	Finland	0.3	0.5	4.9
i	France	0.7	0.6	55.4
e	German Dem. Rep.	-0.2	-0.1	16.6
i	Germany, Fed. Rep.	0.3	-0.2	60.9
m	Greece	0.7	0.6	10.0
e	Hungary	0.4	-0.1	10.6
i	Ireland	1.4	0.9	3.6
i	Italy	0.6	0.3	57.2
i	Netherlands	0.9	0.4	14.5
i	Norway	0.6	0.3	4.2
e	Poland	0.8	0.9	37.5
m	Portugal	0.6	0.7	10.3
e	Romania	1.1	0.5	22.8
i	Spain	1.0	0.7	38.8
i	Sweden	0.5	0.1	8.3
i	Switzerland	0.5	0.2	6.5
m	Turkey	2.4	2.5	51.3
i	United Kingdom	0.2	0.1	56.6
e	USSR	0.9	0.9	279.6
m	Yugoslavia	0.9	0.7	23.3
Middle East and North Africa				
m	Algeria	3.0	3.3	22.6
m	Egypt, Arab Rep.	2.4	2.8	49.7
m	Iran, Islamic Rep.	3.2	2.9	46.0
m	Iraq	3.4	3.6	16.5
m	Israel	2.8	1.8	4.3
m	Jordan	2.6	3.7	3.6
h	Kuwait	7.0	4.5	1.8
m	Lebanon	1.6	—	2.7
h	Libya	4.5	3.9	3.9
m	Morocco	2.5	2.5	22.5
m	Oman	3.6	4.8	1.3
h	Saudi Arabia	4.6	4.2	12.0
m	Syrian Arab Rep.	3.4	3.6	10.9
m	Tunisia	2.1	2.3	7.3
h	United Arab Emirates	15.9	6.2	1.4
m	Yemen Arab Rep.	2.8	2.5	8.2
m	Yemen, People's Dem. Rep.	2.0	2.6	2.1
Sub-Saharan Africa				
m	Angola	2.8	2.5	9.0
l	Benin	2.7	3.1	4.2
m	Botswana	4.2	3.5	1.1
l	Burkina Faso	2.0	2.6	8.1
l	Burundi	1.9	2.7	4.8
m	Cameroon	2.7	3.2	10.6
l	Central African Rep.	1.8	2.5	2.7
l	Chad	2.0	2.3	5.1
m	Congo, People's Rep.	2.7	3.1	1.9
m	Côte d'Ivoire	5.0	3.8	10.4
l	Ethiopia	2.7	2.5	43.6
l	Ghana	2.2	3.3	13.1
l	Guinea	1.9	2.4	6.3
l	Kenya	3.9	4.1	21.2
m	Lesotho	2.3	2.7	1.6
m	Liberia	3.0	3.4	2.3
l	Madagascar	2.5	3.2	10.5
l	Malawi	2.9	3.1	7.3
l	Mali	2.6	2.3	7.7
m	Mauritania	2.2	2.1	1.7
m	Mauritius	1.7	1.3	1.0
l	Mozambique	2.5	2.6	14.2
l	Niger	2.7	3.0	6.6
m	Nigeria	2.5	3.3	103.1
l	Rwanda	3.3	3.2	6.2
l	Senegal	2.5	2.9	6.8
l	Sierra Leone	1.7	2.2	3.7
l	Somalia	3.3	2.9	5.5
m	South Africa	2.3	2.5	33.2
l	Sudan	3.0	2.7	22.6
l	Tanzania	3.3	3.5	23.0
l	Togo	3.0	3.3	3.1
l	Uganda	2.9	3.0	15.2
l	Zaire	2.8	3.0	31.5
l	Zambia	3.1	3.5	6.9
m	Zimbabwe	3.1	3.7	8.7
Asia and the Pacific				
l	Afghanistan	2.4	—	17.5
i	Australia	1.8	1.4	15.9
l	Bangladesh	2.7	2.6	103.0
l	Bhutan	1.5	2.2	1.3
l	Burma	2.2	2.0	37.7
l	China	2.2	1.2	1,055.0
m	Hong Kong	2.2	1.4	5.5
l	India	2.3	2.2	780.2
m	Indonesia	2.3	2.1	165.4
i	Japan	1.2	0.7	121.3
l	Kampuchea, Dem.	0.3	—	7.5
m	Korea, Dem. Rep.	2.7	2.5	20.8
m	Korea, Rep.	1.9	1.5	41.6
l	Lao People's Dem. Rep.	1.4	2.0	3.7
m	Malaysia	2.5	2.5	15.9
m	Mongolia	3.0	2.6	1.9
l	Nepal	2.4	2.4	17.0
i	New Zealand	1.3	0.9	3.3
l	Pakistan	3.1	3.1	99.1
m	Papua New Guinea	2.4	2.6	3.6
m	Philippines	2.8	2.5	56.0
m	Singapore	1.6	1.2	2.6
l	Sri Lanka	1.8	1.4	16.1
m	Thailand	2.7	2.1	52.6
l	Viet Nam	—	2.6	63.3

Key

l = low-income developing country
m = middle-income developing country
i = industrial country
h = high-income oil-exporting country
e = East European country.

*These figures are estimates based on the most recent data.
—Data not available.

Name _____

Date _____

Test: Population Growth

Part I. Vocabulary matching

Put the letter of the correct vocabulary word next to each definition. There is one more vocabulary word than needed.

a. population growth rate
b. immunization
c. economic growth
d. developing country
e. family planning
f. spacing
g. total fertility rate
h. industrial country
i. hygiene
j. nutrition
k. social services

1. _____Eating foods that promote growth and good health.
2. _____A country where most people have a low standard of living with few goods and services.
3. _____Deciding in advance whether to have children, and if so, how many and when.
4. _____A country where most people have a high standard of living with many goods and services.
5. _____The increase or decrease in the number of people in a country in a year expressed as a percent.
6. _____Some examples are schools, hospitals, sanitation facilities, and clean water.
7. _____Planning the birth of children so that the babies are at least two years apart.
8. _____The average number of children a woman will have during her lifetime.
9. _____Practices, such as hand washing, that help ensure cleanliness.
10. _____The process by which a country increases its ability to produce goods and services.

Part II. Multiple choice

Read each statement and circle the correct response.

1. The most significant factor contributing to the decrease in population growth rates since 1950 is
   a. smaller families
   b. decrease in the death rate
   c. lower fertility rates in all countries
   d. the fear of starvation
2. Countries with the lowest population growth rates are most likely found in
   a. Asia and North America
   b. South American and Europe
   c. Africa and Asia
   d. North America and Europe
3. Population growth rates increase most rapidly when
   a. birth rates increase, death rates decrease
   b. birth rates decrease and death rates increase
   c. birth rates stabilize and death rates decrease
   d. birth and death rates both increase
4. In 1986, more than three quarters of the population of the world lived in
   a. industrial countries
   b. East European nonmarket economy countries
   c. middle-income developing countries
   d. developing countries
5. The current population of the world is approximately
   a. 10,000,000
   b. 20,000,000,000
   c. 800,000,000
   d. 5,000,000,000
6. The gap between the death rate and the birth rate in a country approximates its
   a. total fertility rate
   b. population growth rate
   c. life expectancy
   d. economic growth
7. A major factor in the decline of birth rates is
   a. the reduction of the total fertility rate
   b. the education of women
   c. the increased availability of family planning services
   d. all of the above
8. The average annual increase in population in developing countries is getting larger primarily because of
   a. the continual increase in the population growth rate
   b. the high birth rate
   c. the increased number in the population base
   d. the lack of economic development
9. Between now and the year 2000, rapid population growth will have the greatest impact on
   a. low-income developing countries
   b. industrial countries
   c. East European nonmarket economy countries
   d. middle-income developing countries

10. In country X, where the life expectancy is 77 years, which of the following is most likely to be the population growth rate?
    a. 0.5%
    b. 2.8%
    c. 3.0%
    d. 4.1%

Part III. Short answer

Answer each question completely but briefly.

1. What are two reasons why parents in developing countries tend to have large families?
    a.

    b.

2. What are two projects governments in developing countries could support that would help slow population growth and improve living standards?
    a.

    b.

3. What are three health needs that if met could help slow down population growth?
    a.

    b.

    c.

Part IV. Essay

Select one and answer on a separate sheet of paper. Using the information and data you have learned, discuss the question thoroughly.

1. Discuss some specific strategies a government might use to help encourage parents to have fewer children?

2. You and your spouse are poor farmers. You are discussing whether or not to have children and, if so, how many. Write the dialogue of the discussion. Give specific reasons for and against having children.

Answers

Worksheet 1: Vocabulary matching

1. health services
2. contraception
3. developing countries
4. immunization
5. total fertility rate
6. death rate
7. spacing
8. nutrition
9. hygiene
10. family planning
11. dehydration
12. population growth rate
13. industrial countries
14. economic growth

Worksheet 2: Understanding the map

1. yellow, dark green
2. 3.0% or more, 0.9% or less
3. various countries can be named
4. the ones with the most yellow, especially Africa
5. the ones with the most dark green, especially North America and Europe
6. the dark green ones, where population growth rates are low; the yellow ones, where population growth rates are high
7. Answers will vary but should include factors such as health conditions, family income, access to education, and availability of goods and services.
8. When parents have little access to good incomes, education, health services, and social and economic security, they tend to have more children.
9. Countries with higher population growth rates tend to have lower levels of economic development.

Worksheet 3: Understanding Chart 1

1. developing and industrial countries
2. blue: death rate; red: birth rate
3. The difference between a country's death and birth rates approximates its population growth rate.
4. All have decreased.
5. developing countries; industrial countries
6. Answers will vary but should indicate that better medical technology has helped all countries reduce their death rates, but that more education, family planning, and social and economic security are needed so that birth rates will decrease more rapidly.
7. a: have decreased the death rate and are helping to reduce infant mortality, so parents will no longer feel pressure to have many children to ensure that some survive.

   b: has helped parents control the number of children they have, space their births, and help ensure their health.

   c: helps them get better jobs and have more control over their lives, including whom they marry and when or if they have children.

   d: helps ensure better sanitation, nutrition, education, and immunization, so parents and children are healthier.

Worksheet 4: Understanding Chart 2

1. It has decreased.
2. Answers will vary but should include improved health services, more education, higher incomes, better family planning, and more economic and social security.
3. It has increased, because the total population base has increased.
4. No, because population is still increasing. And even once population growth has stabilized, the country must continue working to ensure that population does not begin to increase again.

Worksheet 5: Understanding Chart 3

1. Low-income developing and middle-income developing countries. People in low-income developing countries are even poorer than people in middle-income developing countries.
2. a: low-income b: low-income c: low-income
3. a: 4.8 billion b: 3.8 billion c: 1 billion
4. 77.3%
5. a: approximately 6.1 billion b: approximately 4.9 billion c: approximately 1.2
6. 80%
7. Demands for more food, energy, housing, and social services.
8. Yes; by reducing the average number of children born to each woman.

Worksheet 6: True or false statements

1. False; Africa
2. False; students should list any country with a population growth rate of 3% or higher
3. True
4. False; increasing
5. True
6. False; decreasing
7. True
8. False; total fertility rate
9. True
10. True
11. True
12. False: low-income developing countries
13. False; decrease
14. True
15. False; developing
16. False; women

Worksheet 7: Exploring the photographs

This standardized worksheet is designed for use with all six photographs/texts. Teachers may wish to ask specific questions about each photograph/text.

Worksheet 8: Role playing

This worksheet can be simplified by omitting the budget figures and having students simply rank the three projects they feel are most important and explain their choices. If students work alone, they can write their reasons on the back of their papers. If they work in groups, they should outline their reasons on their papers, then present their results to the class and defend their choices.

Worksheet 9: Using the Data Table

1. China: l; 1055.0; 2.2; 1.2; Asia
   India: l; 780.2; 2.3; 2.2; Asia
   USSR: e; 279.6; 0.9; 0.9; Europe
   USA: i; 241.2; 1.0; 1.0; North America
   Indonesia: m; 165.4; 2.3; 2.1; Asia/Pacific
   Brazil: m; 138.4; 2.5; 2.3; South America
   Japan: i; 121.3; 1.2; 0.7; Asia/Pacific
   Nigeria: m; 103.1; 2.5; 3.3; Africa
   Bangladesh: l; 103.0; 2.7; 2.6; Asia
   Mexico: m; 80.7; 3.2; 2.6; North America
2. The developing countries tend to have the largest populations and the highest population growth rates. USA, USSR, and Japan are exceptions. The two most populous countries are in Asia. The trends are important because the countries that can least afford to have large populations are the ones in which populations are increasing.
3. Group A: 3.8; 3.6; 4.1; 3.4; 3.1; 3.7
   Group B: 1.1; 1.2; 0.1; 1.8; 1.3; 0.7
4. Countries in Group A tend to have lower life expectancies than countries in Group B.
5. Countries in Group B have lower annual population growth than countries in Group A.
6. Students should list such items as higher incomes; better education and training, especially for women; better health care and family planning services; pension plans, reliable banks, and affordable health insurance.

Worksheet 10: Thinking and calculating for yourself

1. Healthy mothers do not infect their children and are better able to care for their families. Healthy children have a better chance of surviving, so parents may feel less pressure to have more children.
2. Greater productivity means parents need fewer children to labor in the fields. Higher prices mean parents earn more income and can better provide for their children. As a result, parents tend to have fewer children and families have a higher standard of living.
3. With a basic education, parents can learn and understand more about health, nutrition, and family planning issues. They can also get better paying jobs and thus better provide for their families.
4. Rapid population growth reduces a country's ability to provide basic economic and social services. The poorest people need these services the most because they have little education, low incomes, and poor health. At the same time, they have little political power with which to fight for the services.
5. 1,663,820 (74,003,820 − 72,340,000) ÷ 72,340,000 × 100 = 2.3%.
6. population increase: 3,812,550 − 1,270,850 = 2,541,700
birth rate: 3,812,550 ÷ 90,775,000 × 100 = 4.2%
death rate: 1,270,850 ÷ 90,775,000 × 100 = 1.4%
population growth rate: 4.2% − 1.4% = 2.8%
7. Projected percentage population increase:
677,585,000 ÷ 2,499,415,000 × 100 = 27.1%
(NOTE: *Average* annual population growth rates for a period of years give a better picture of population trends than do annual rates. However, calculating any growth rate for a period longer than a year requires more complicated mathematical formulas than the one used to calculate an annual rate.)

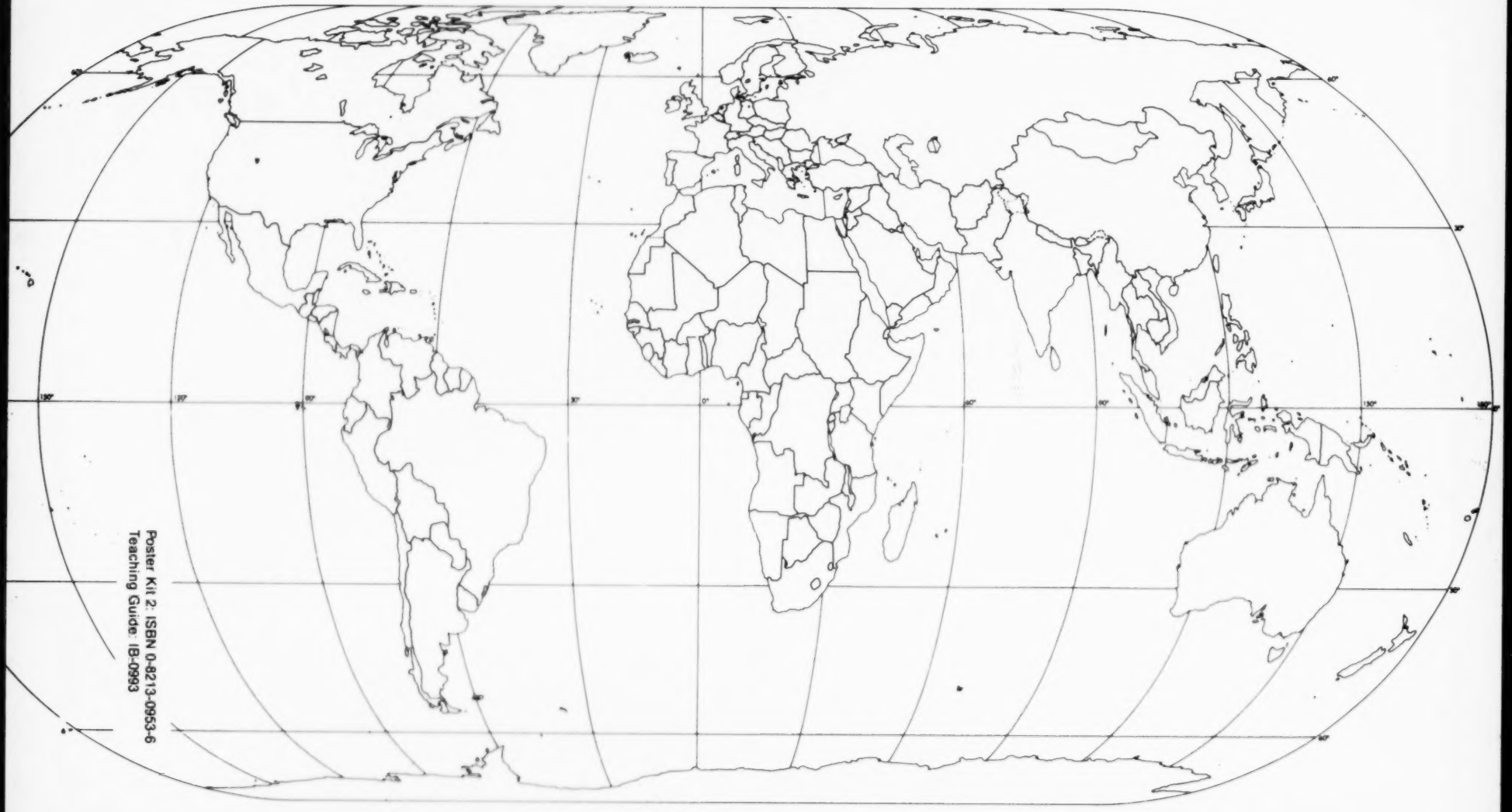
Test

Part I. Vocabulary matching

1. j	6. k
2. d	7. f
3. e	8. g
4. h	9. i
5. a	10. c

Part II. Multiple choice

1. b	6. b
2. d	7. d
3. a	8. c
4. d	9. a
5. d	10. a



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